Examiner does not mention these critical features in regard to Jones, thus acknowledging that Jones does not provide them. The evident conclusion is that the formation of a low-melting inorganic, borosilicate glass in the biocide is not anticipated in the cited documents, and as no combination of technological elements provided by Olson and Jones could have been combined to provide said critical features, and, furthermore, as said features lead to an unexpected result – introduction of fire retardancy to otherwise inherently comburant material – the features are by definition non-obvious over both documents.

As defined in the amended claim 1, the invention ensures superior safety for shipping the risky material, complying with the UN test. Since all pending claims depend from claim 1, they are also believed to be non-obvious.

Even though it is respectfully believed that, after the above amendments and explanations, the claims will be allowed, the applicant wishes to provide a complete response and to relate to all Examiner's notes.

The Examiner notes (lines 7-8 on page 5 of the Examiner's letter) that Olson teaches a biocide covered with a layer of inorganic compounds, such as silicates and borates, citing Olson's column 5. Firstly, in contrast to the Examiner's belief, Olson does not teach a biocide covered with a layer of inorganic compounds, but a biocide covered with a layer of organic compounds comprising waxes and alcohols (lines 24-35 at column 5); secondly, said cited Olson's column 5 does not teach a layer of silicates and borates, but it teaches that "*nearly any substance may be employed as the outer coating material*", giving a "*nonexhaustive list*" of 34 inorganic material, and further even 14 organic materials, but without any hint that two of these 48 materials (out of thousands of various combinations), namely borates and silicates, should be simultaneously employed.

The Examiner's attention is directed to the fact that

> a) the instant invention does not claim silicates or borates, but only their combination;
> b) the combination in the instant invention is not used for encapsulating a precoated biocide particle, but for homogeneously admixing with the biocide and for consequent dry or wet granulating (par. 0020 of the instant application publication); and
> c) the instant invention makes effort, and that is its rationale, to avoid contacting the biocide with an organic compound (par. 0003), while Olson coats the biocide with an organic compound, such as wax or alcohol.

The Examiner believes (lines 15-16 on page 5 of her letter) that Olson teaches a mixture of inorganic compounds in columns 5-6, but Olson in fact teaches "*compounds which may be used as the second coat*" (lines 47-48 at col. 5), which would mean to a skilled person that any one of them separately can be used, and not a mixture of them (used as a coat and not in a coat), and still less suggested is a particular combination of two of the materials. Furthermore, the cited passage teaches explicitly against restricting the materials to inorganic materials (see, for example, "*organic sequestering agents*" at line 62 of col. 5).

The Examiner further incorrectly believes that Olson teaches that the composition can be heated to 590-870°C (lines 6-7 on page 6 of the Examiner's letter); Olson teaches that a first inner coating is heated to its melting temperature but below the melting temperature of the outer coating (lines 29-32 at col. 3), whereas the inner coating is a wax

melting at 43-60°C (lines 35-36 at col. 5). The passage reciting 590-870°C (lines 8-13 at col. 5) does not relate to treating the Olson's product, but to the theoretical melting point of an additional optional coating (useful initial polyphosphate coating, claim 7), which is never melted during the process (see the Olson's Examples). Olson employs temperatures around 100°C (line 64 at col. 4), and emphasizes that said optional polyphosphate will not be affected during said low temperature treatment; however, this polyphosphate would be unusable in the present invention as it is explicitly taught by Olson as unstable at high temperatures and as decomposing (line 13 at col. 5).

The Examiner's conclusion at lines 13-14 on page 6 ("*Therefore, the inorganic coating that reduces the oxidant ability of the biocides as disclosed for the instant invention is taught by Olson.*") results from a misunderstanding, because

> a) Olson does not teach inorganic coating, but a complex multiple, partially or fully organic coating created at a temperature higher than the melting temperature of the organic component; and
> b) the instant invention does not disclose any coating, but it discloses mixture of two powders (a biocide and a combination of inorganics mixed at ambient temperature), wherein no coating or layering is present in the composition, nor any melting or increasing temperatures participates during manufacturing the instant composition.

It is emphasized that one of the powders assumes a fire-retarding role during an accidental temperature increase; only in the time of an accident, the inorganic combination melts and surprisingly renders the biocide non comburant

Finally, in her Response to Remarks, the Examiner notes that Olson's composition would also form a glass coating over the biocide when heated (lines 4-5 on page 3 of the Examiner's letter). As mentioned above, Olson teaches organic inner coating (lines 25-35 at col. 5), and any organic or inorganic substance with a higher melting point for outer coating (lines 39-68 at col. 5), reciting many materials, but never hinting that borates and silicates should be of any purpose or advantage, and never hinting that they should be used simultaneously. But for the sake of discussion, even if incidentally present, borate and silicate would form a coating from the beginning (these materials are recited as being the outer coating) on the capsule, even without heating at 300-800°C, and these inorganics would be never mixed with the biocide inside the capsule, while the biocide in the capsule core would be in contact with the organic material of the inner coat – hardly complying with the fire retardancy of the instant composition. On the other hand, the instant composition has never got any coating, because the instant glass is dispersed within the biocide. Examiner notes that the claim language does not exclude the presence of coatings or layers also in the instant invention; as amended claim 1 uses the language "biocidal components mixed with a combination of inorganic compounds", it is now clear to a person skilled in the art that the components are interspersed and not layered.

The Examiner cites Jones (the last paragraph on page 6 and page 7 of her letter), as completing the Olson's teaching and yielding the missing parts to provide the instant invention. The Examiner mentions hydantoins as the missing part to be added from Jones to Olson, and concludes:

> "*A reasonable expectation of success could have been expected by adding the constituents taught by Jones et al. to the composition taught by Olson.*

Therefore it would have been prima facie obvious for one of ordinary skill in the art, at the time of the invention, to incorporate the oxidants such as halogenated hydantoins, and flocculants such as aluminum sulfate, into the composition taught by Olson, because both compositions are used as biocides."

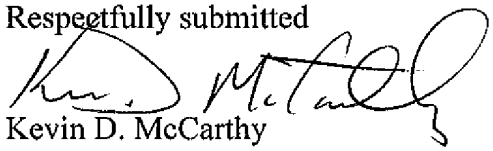
It is respectfully submitted that by adding the mentioned constituents of Jones et al., namely hydantoins and flocculants, to the Olson's encapsulated particle, the resulting composition would not resemble the instant composition more than before said adding. Olson's three to four layered capsule of biocide and organic admixtures covered with a solid coat has nearly nothing in common with the instant non flammable, homogeneous mixture of biocide with inorganic admixtures, and the two systems would not be more similar if the coated, multilayered capsule further contained flocculants or hydantoins – materials not constituting an essential part of the instant invention as defined in amended claim 1.

The critical feature of the instant invention is simple: less than 20 wt% of borates and silicates admixed into a biocide renders the biocide fire-retarded, because in case of an accidental fire – borosilicate glass is formed inside the homogeneous mixture, inhibiting the fire spread inside the material body. When keeping this in mind, it is clear that Olson does not address the instant goal and even incidentally does not contribute to attaining it, because it does not explicitly teach inorganic admixtures, it does not explicitly teach a combination of just two admixtures, and it teaches against dispersion of admixtures in the biocide (teaching their layering). Jones does not address the instant goal either, so that a person skilled in the art, trying to fire-retard a biocide, in the time before the instant application, would have hardly had any motivation to combine Olson with Jones; however, even if in hindsight considering Jones et al., a combination of borates and silicates would not have been found there, nor the idea of low melting glass interspersed within the biocide. Finally and importantly, the goal of fire-retarding the biocide is achieved in the invention by surprisingly simple means.

Conclusions

The unexpected finding of the applicant satisfies a long-felt need for increasing safety during the biocide transportation, providing a cost-effective and surprisingly simple solution of the problem, rendering the biocide non-comburant according to the UN test. It is respectfully submitted that the cited prior art could not have inspired a person skilled in the art to solve the problem as done in the instant invention. It is believed that, after the above amendments and explanations, the pending claim are now ready for allowance.

Respectfully submitted



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